

MOBILE DEVICE WITH AN INCLINOMETER**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] The present disclosure claims the benefit of Provisional Application No. 61/095,225, filed Sep. 8, 2008, which is incorporated by reference herein in its entirety and to which priority is claimed.

FIELD

[0002] The present disclosure is generally related to a multi-panel electronic device with an inclinometer.

DESCRIPTION OF RELATED ART

[0003] Advances in technology have resulted in smaller and more powerful computing devices. For example, there currently exist a variety of portable personal computing devices, including wireless computing devices, such as portable wireless telephones, personal digital assistants (PDAs), and paging devices that are small, lightweight, and easily carried by users. More specifically, portable wireless telephones, such as cellular telephones and internet protocol (IP) telephones, can communicate voice and data packets over wireless networks. Further, many such portable wireless telephones include other types of devices that are incorporated therein. For example, a portable wireless telephone can also include a digital still camera, a digital video camera, a digital recorder, and an audio file player. Also, such wireless telephones can process executable instructions, including software applications, such as a web browser application, that can be used to access the Internet. As such, these portable wireless telephones can include significant computing capabilities.

[0004] Although such portable devices may support software applications, the usefulness of such portable devices is limited by a size of a display screen of the device. Generally, smaller display screens enable devices to have smaller form factors for easier portability and convenience. However, smaller display screens limit an amount of content that can be displayed to a user and may therefore reduce a richness of the user's interactions with the portable device.

SUMMARY

[0005] A mobile device with a controller, accelerometer, and an inclinometer is disclosed. The accelerometer is positioned off-center towards one end of the mobile device. The controller senses acceleration of the mobile device greater than a predetermined threshold indicating rotation of the mobile device and also determines that the inclination of the mobile device has been relatively constant during the rotation. The controller holds the content displayed on the multi-fold mobile device in place as the device turns by continuously redrawing the content until the acceleration stops. This enables a user of the device to spin the device, while the device is flat or otherwise, to switch the display of the content from a portrait to landscape display, or any display position in between.

[0006] In a particular embodiment, an electronic device is disclosed that includes a first panel having a first display surface, a second panel having a second display surface, a third panel having a third display surface. The first panel is rotatably coupled to a first edge of the second panel and the third panel is rotatably coupled to a second edge of the second panel. The electronic device also includes an inclinometer

located at the second panel and configured to detect a change in an inclination of the second panel. The electronic device also includes an accelerometer offset from a center of the second panel to detect a rotation of the second panel from a landscape orientation to a portrait orientation. The electronic device also includes a processor configured to execute at least one software application having a graphical user interface. The processor is responsive to the inclinometer and responsive to the accelerometer to redraw an image displayed at the first display surface, the second display surface, the third display surface, or any combination thereof, from a landscape-type display of the image to a portrait-type display of the image when the first panel, the second panel, and the third panel are in at least one predetermined folding configuration and the change in the inclination of the second panel does not exceed a threshold during the rotation of the second panel.

[0007] In another particular embodiment, a method is disclosed that includes detecting a change in an inclination at a panel of an electronic device, where the panel has a display surface. The method also includes detecting a rotation of the panel from a first orientation to a second orientation. The method also includes automatically redrawing an image displayed at the display surface responsive to the rotation when the change in the inclination of the panel does not exceed a threshold during the rotation.

[0008] One particular advantage provided by at least one of the disclosed embodiments is an intuitive operation of a multi-panel electronic device in which the multi-panel electronic device maintains a static display with respect to the view of a user of the multi-panel electronic device during rotation of the multi-panel electronic device. This particular advantage may also be observed when the device is parallel to the ground while rotating.

[0009] Other aspects, advantages, and features of the present disclosure will become apparent after review of the entire application, including the following sections: Brief Description of the Drawings, Detailed Description, and the Claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a diagram of a first illustrative embodiment of an electronic device;

[0011] FIG. 2 is a diagram of an illustrative embodiment of the electronic device of FIG. 1 in a fully folded configuration;

[0012] FIG. 3 is a diagram of an illustrative embodiment of the electronic device of FIG. 1 in a thumbing configuration;

[0013] FIG. 4 is a diagram of an illustrative embodiment of the electronic device of FIG. 1 in a travel clock configuration;

[0014] FIG. 5 is a diagram of a first illustrative embodiment of the electronic device of FIG. 1 in a fully extended configuration;

[0015] FIG. 6 is a diagram of a second illustrative embodiment of the electronic device of FIG. 1 in a fully extended configuration;

[0016] FIG. 7 is a diagram of an illustrative embodiment of the electronic device of FIG. 1 in a video conferencing configuration;

[0017] FIG. 8 is a block diagram of a second illustrative embodiment of an electronic device;

[0018] FIG. 9 is a diagram of a third illustrative embodiment of an electronic device;

[0019] FIG. 10 is a partial cross-sectional diagram of the electronic device of FIG. 9;